

## **REMARKS**

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 28-54 were pending, claims 41-54 have been withdrawn. By the present response, claims 28-30 have been amended, and claim 55 has been added. Thus, upon entry of the present response, claims 28-40 and 55 remain pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: page 8, lines 2-5; and page 16, lines 4-14.

### ***CLAIM REJECTIONS UNDER 35 U.S.C. §112***

Claim 30 stands rejected under 35 U.S.C. §112, second paragraph, on the grounds set forth on page 2 of the Official Action.

By the present response, applicants have amended claim 30 in a manner which addresses the above-noted rejection. Therefore, reconsideration and withdrawal of the rejection is respectfully requested.

### ***CLAIM REJECTIONS UNDER 35 U.S.C. §103***

Claims 28-31 and 33-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,753,751 to Shannon (hereafter "Shannon") in view of GB 2256192 (hereafter "GB '192") on the grounds set forth on page 3 of the

Official Action. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to an improved method of preparing a thermal and/or acoustic insulation material based on dried precipitated silica that makes it possible to improve the properties of the insulation material with respect to mechanical integrity and thermal and/or acoustic insulation properties, relative to conventional methods. The method of the present invention is also simpler and more economical than conventional methods. See, e.g., page 5, lines 5-15 and 32-37.

A method performed according to the principles of the present invention is set forth in claim 28. Claim 28 recites:

28. *A method of preparing a thermal and/or acoustic insulation material based on dried precipitated silica, comprising the steps:*

(A) *filtering an aqueous dispersion containing precipitated silica particles in a filter press, whereby a compacted filter cake is obtained; and then*

(B) *drying the filter cake in the compacted state as obtained after step (A).*

*Shannon* is directed to synthetically prepared bodies of molded high temperature thermal insulation material composed essentially of a matrix of chemically combined alkaline earth metal silicate interspersed with cotton fibers. See, e.g., Abstract. Thus, contrary to the requirements of Claim 28, the techniques described in *Shannon* do not involve filtering an aqueous dispersion containing precipitated silica particles. This is admitted on page 4 of the Official Action.

Moreover, as evident from the above, Claim 28 is directed to a method of preparing a thermal and/or acoustic insulation material based on dried precipitated silica. In fact, *Shannon* is not directed to a method of preparing a material based on silica of

any form, much less precipitated silica. In fact, *Shannon teaches away* from forming a thermal and/or acoustic insulation material from precipitated silica, and instead strongly favors and even requires the use of alkaline earth metal silicate to form such material. This is made clear from at least the following portions taken from the *Shannon* disclosure:

The porous integrated crystalline or microcrystalline structure of alkaline earth metal silicate thermal insulation materials gives rise to many desirable physical characteristics which, as is well-known to those skilled in the art, are not attainable with other types of thermal insulation materials. (Emphasis added) (Col. 1, Ins. 49-54)

Before proceeding with a detailed description of the drawings, it is important to keep in mind that the nature and character of the present invention, as well as the structural and physical features thereof . . . is such that it applies without limitation to all forms, shapes and customary usages of hydrothermally or new pneumatically molded bodies of hydrous alkaline earth metal silicate insulation materials. (Emphasis added) (Col. 5, Ins. 31-39)

As acknowledge on page 4 of the Official Action, *Shannon* fails to disclose a process of forming a material from dry precipitated silica. In fact, *Shannon* goes a step further and teaches away from forming such materials from "other types of thermal insulation materials," such as dried precipitated silica. *Shannon* is devoid of any hint that the objectives of the invention described therein can be achieved with any other insulative material other than an alkaline earth metal silicate.

*GB '192* directed to silica-based insulation material which can be formed by mixing and compressing dry particulate materials this type of dry patching technique is discussed, for example, on page 3 of the present specification. As discussed on

page 3, panels obtained according to such dry compaction methods usually suffer from insufficient physical and/or mechanical properties.

It is alleged on page 4 of the Official Action that it would have been obvious to one of ordinary skill in the art to "use precipitated silica" in the process disclosed by *Shannon*. Presumably, the rejection implies that it would have been obvious to form thermal and/or acoustic insulation material from dry precipitated silica rather than from the alkaline earth metal silicate taught by *Shannon*. However, this is clearly not the case. For the reasons described above in connection with the discussion of the teachings of *Shannon*, one of ordinary skill in the art would not have been motivated to utilize any material other than alkaline earth metal silicate to form the thermal and/or acoustic insulation material in light of the above quoted teachings contained in *Shannon*. Thus, one of ordinary skill in the art would not have been motivated to make the proposed combination.

Therefore, for at least the reasons set forth above, reconsideration and withdrawal of the rejection of claim 28 is respectfully requested. The remaining claims depend from claim 28. Thus, these claims are also distinguishable over the proposed combination of *Shannon* with GB '192 for at least the same reasons noted above.

Claims 29 and 30 are also distinguishable over *Shannon* in view of GB '192 for at least one additional reason. Namely, claims 29 and 30 each require that step (A) of claim 28 include utilizing a pressure of about 2 to about 10 bar. By contrast, *Shannon* teaches compaction using pressure filtration at pressures on the order of "several hundred pounds per square inch" (emphasis added; col. 7, Ins. 13-14). These pressure levels greatly exceed the 2 to 10 bar range recited in claims 29 and

30. For instance, 10 bar of pressure corresponds to 145 psi. GB '192 also teaches utilization of much greater pressures than that recited in claims 29 and 30. For example, on page 3 of GB '192 it is disclosed that the constituent powders are mixed compacted according to the teachings of GB 1205572 (hereafter "GB '572"). GB '572 teaches compaction of the dry powder in a molding die at a pressure of 200 psi. This pressure corresponds to 13.8 bar, which greatly exceeds the uppermost pressure limit of 10 bar recited in claims 29 and 30. Thus, the combined teachings of *Shannon* and GB '192 would lead one of ordinary skill in the art to utilize a pressure which is greater than that required by the presently claimed invention. It is believed that these higher pressures are disadvantageous in terms of resulting thermal and/or acoustic properties which may be obtained from the final product. For instance, as discussed on page 7 of the present specification, use of excessive pressures when compacting the precipitated silica can result in low pore volume which is prejudicial to insulation properties. Thus, the method of the presently claimed invention uses more moderate pressures which are believed to result in a superior material.

For at least the reasons explained above, claims 29 and 30 are also distinguishable over the proposed combination of *Shannon* with GB '192 for at least these additional reasons.

Newly present claim 55 is also further distinguishable over the proposed combination for at least the following additional reasons. Newly presented claim 55 further specifies that the dried filter cake comprises at least 50 percent by weight of dried precipitated silica. In contrast, the highest silica content apparently contemplated in *Shannon* is on the order of 40% (Example 2). Application of the

teachings of *GB '192* does not lead one of ordinary skill in the art to a higher silica content. In fact, the opposite is true. Namely, *GB '192* quite clearly teaches utilizing a mixture of dried particulate materials which include, at most 90% precipitated silica. Thus, combining the teachings of *Shannon* with *GB '192* further reduce the overall amount of silica which could be contained in the material (i.e., 90% of 40% which is 36%). Therefore, claim 55 is also distinguishable over the proposed combination of *Shannon* with *GB '192* for at least these additional reasons.

Claim 32 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Shannon* and *GB '192*, and further in view of U.S. Patent No. 4,590,052 to Chevallier et al. (hereafter "*Chevallier et al.*") on the grounds set forth on page 5 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

*Chevallier et al.* is cited on page 5 of the Official Action as allegedly teaching the use of a silica having a CTAB of 20-350 m<sup>2</sup>/g. However, even if the proposed combination were appropriate, which Applicants assert is not the case, the claimed invention still would not result. Namely, the applied teachings of *Chevallier et al.* fail to cure the deficiencies previously noted above in connection with the primary combination of *Shannon* and *GB '192*. Thus, reconsideration and withdrawal of the rejection is respectfully requested.

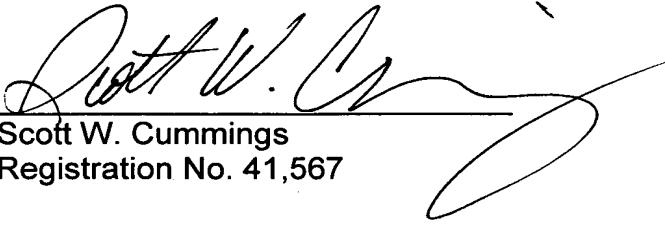
**CONCLUSION**

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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Date: May 21, 2009

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